Work Order ID 100590 Wednesday, April 24, 2013 9:02:51 AM				*100		Page 1					
Revision ID:	D3239-1 Cover			Accept	*N900	) <u>04</u> 0	100	)* s	Setup Start	1/1/2/1	*
Start Date: 4 Required Date: 5 Reference:	4/24/2013 5/3/2013	Start Qty: 24.00 Req'd Qty: 24.00	*24* *24*		Cust Item Customer:					1417	
	Process Pla	an: MF	Date: 13-4-24	Tooling: SPC (Y/N):		Pate:		R	Run Start Stop	"NRT	
Sequence ID/ Work Center ID	)	Operation Description	,	Set Up/ Run Hours	Tool ID	Tool#	Plan Code	Accept Qty	Reject Qty	Reject Insp. Number Stam	• 1 •
Draw Nbr		vision Nbr				***				т <del></del> 	er sow.
D3239	Rev	/ A	• • • • • • • • • • • • • • • • • • •						** **		the official and
*100 *100* Waterjet FLOW CNC Waterjet	et .	FLOW WATER JET  Memo  1-Cut as per I  Deburr if nec	Dwg D3239 Dwg Rev:	0.00 0.00 Prog Rev: 1	2-			24		Q.5	13:04.2
*11 <b>0</b>		QC2- Inspect parts off ma	achine FAI/FAIB	0.00			17	·	•	(OAS)	
QC Quality Control		Memo		0.00	•			24,			1304.26
<sup>20</sup> *12∩*		QC8- Inspect parts - secon	nd check	0.00	AS 27			nu			
QC		Memo		0.00	<i>V</i> 240			ØŢ.			

Quality Control

NCR:	Yes	/ No				WORK ORDER NON-C	OI	NFORI	MANCE / UPI	DATE	QA Closed	I: Date:	•
Work Ord	or.					DISPOSITION			*******	AGAINST D	EPARTMEN	T/PROCESS	
Part I	No.					Rework Scrap Use-as-is Work Order Update		Skid-tube Crosstube  Machining Small Fab  Thermoforming Finishing Large Fab Composite  Initial Action				Water Jet od. Eng. Coor. ore/Packaging Supplier	Engineering Quality Other
Root					l '	ption of work order update	1	nitial			Sign &		
Cause		Date	Step	Qty	(	or Non-conformance	Ch	ief Eng	Descr	ription	. Date	Verification	QC Inspector
Doc/Data Equip/Tooling Operator										esta S			
Material Setup Other						•							
Process Supplier Training Unapproved	7								·				
		<del></del>	·			F.	AUL	T CATE	GORY			,	
Landi	ng (					General							
		Bending Centre No Cracks Crushed/			o/s	Bend BOM/Route Broken/Damaged Burrs		4	re on Incomplete ions Incomplete/l	Inclear	Ovalized Over/Under Part Income	er tolerance rect	Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled
		Cuffs	cimped.			Contamination	$\vdash$	Mainte	•	onercui	Part Move	_	7.00.00.00.00.00.00.00.00.00.00
		Heat Trea	it			Countersink		Mislabe	eled 🔍	Γ	Positioned	Wrong	_
		Inspection	n Strip in	Tube		Cut Too Short		Misread	i		Power Los	s/Surge	Other
		Ripples in	Bend			Drill Holes		Offset		_			
	Torque Waves in Extrusion Drawing			Out of Calibration									
	Turning Sequence Finish		Out of Sequence										

Outside Dimensions

Date:

DQA:

Wave/Twist in Tube

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Page 2

Wednesday, April 24, 2013 9:02:51 AM D3239-1 \*N900040100\* Item ID: Accept Setup Start **Revision ID:** Item Name: Cover **Start Qty: 24.00** 4/24/2013 **Start Date: Cust Item ID:** Req'd Qty: 24.00 Required Date: 5/3/2013 **Customer:** Reference: Run **Process Plan:** Approvals: Date: **Tooling:** Date: Date: SPC (Y/N): Date: Reject Reject Sequence ID/ Operation Tool ID Tool # Plan Accept Insp. Set Up/ **Work Center ID** Description Qty Qty Number Stamp Code **Run Hours** 130 0.00 Small Fab \*130\* Small Fab 0.00 Memo Small Fab Deburr if necessary. 24 7613.6.14 140 Chemical Conversion Coat per QSI005 4.1 0.00 \*140\* HandFinish 0.00 Memo Hand Finishing 150

Quality Control

QC3- Inspect Part Finish

Memo

NCR: Y	'es / No				WORK ORDER NON-O	CON	<b>NFORM</b>	MANCE / UPI	DATE			
QA CI-						QA Closed:	Date	:				
Work Orde	er:				DISPOSITION				AGAINST DE	PARTMENT	/PROCESS	
Part N	lo.				Rework Scrap Use-as-is			Skid-tube Machining noforming	Crosstube Small Fab Finishing	4	Water Jet d. Eng. Coor. re/Packaging	Engineering Quality Other
NCR N	lo	<del></del>			Work Order Update	]	mem	Large Fab	Composite	Nec/3tol	Supplier	
Root				Descri	ption of work order update		nitial	Act	tion	Sign &		
Cause	Date	Step	Qty		or Non-conformance	Ch	ief Eng	Descr	ription	Date	Verification	QC Inspector
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Equip/Tooling											`	
Operator												
Material	_											
Setup												
Other			1									
Process	_											
Supplier	_											
Training												
Unapproved						<u> </u>	T CATE	CORY	<del>-</del> ,	<u> </u>	<u></u>	
					General	AUL	ICATE	GURT				
Landin	ng Gear Bending				Bend		Grain			Ovalized	Г	Pressure/Forced
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}	Cracks	Ji Concei	intric to C	"³   <del>-</del>	Broken/Damaged	-		ion Incomplete	-	Part Incorre	<b>!</b>	Weld
ł	Crushed/	Crimned		-	Burrs	-	1	ions Incomplete/l	Unclear	Part Lost/M	<b>-</b>	Wrong Stock Pulled
ŀ	Cuffs	cimpea.	-	<u> </u>	Contamination	-	Mainte	•		Part Moved		
Ì	Heat Trea	nt		-	Countersink	$\vdash$	Mislabe			Positioned V	Vrong	
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ľ	Ripples in	•			Drill Holes	-	Offset		L		- <u>-</u>	
ţ	Torque W		Extrusion	,	Drawing	$\vdash$	l	Calibration				
ŀ	Turning S				Finish	$\vdash$	1	Sequence				
	, ,											

Outside Dimensions

DQA:

Date:

Wave/Twist in Tube

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Order ID 100590 Wednesday, April 24, 2013 9:02:51 AM Item ID: D3239-1 Accept Setup Start **Revision ID:** Item Name: Cover 4/24/2013 Start Qty: 24.00 **Start Date: Cust Item ID:** Required Date: 5/3/2013 Req'd Qty: 24.00 **Customer:** Reference: Run **Process Plan:** Approvals: Date: Tooling: Date: Stop QC: Date: SPC (Y/N): Date: Sequence ID/ Operation Set Up/ Tool ID Tool # Plan Accept Reject Reject Description Work Center ID **Run Hours** Code Qty Qty Number Stamp Identify as per dwg & Stock Location 160 0.00 \*160\*

170

QC21- Final Inspection - Work Order Release

0.00

0.00

\*170\*

Packaging

Packaging

QC **Quality Control** 

Memo

Memo

0.00

Insp. -

Page 3

												DQA:	D	ate:	
NCR:	⁄es	/ No				WORK ORDER NON-	COI	VFOR	ANCE / UP	DATE		OA Classila		_4	
						Y						QA Closed:	U.	ate:	
						DISPOSITION				AGAINST	DE	PARTMENT	/PROCESS		•
Work Orde	er: -					Rework	1		Skid-tube	Crosstube			Water Je	· 🗀	Engineering
Part N	do.					Scrap	1 1		Machining	Small Fab		Pro	d. Eng. Coor	$\vdash$	Quality
Faiti	٠٠				· · · · · · · · · · · · · · · · · · ·	Use-as-is	1		noforming	Finishing	-	l.	re/Packaging	_	Other
NCR N	۱o.					Work Order Update	1	!	Large Fab	Composite		,	Supplie	-	
	-						_			•					
Root					Descri	ption of work order update		Initial	Ac	tion		Sign &			
Cause		Date	Step	Qty	(	or Non-conformance	Ch	ief Eng	Desc	ription		Date	Verification	on	QC Inspector
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							AUI	T CATE	GURT						<u> </u>
Landi	_					General Bend	Г	Grain			$\overline{}$	Ovalized			Pressure/Forced
	$\vdash$	Bending	A Caman	_+.:_+	0/5	BOM/Route	$\vdash$	Hardwa	ro		┝	Over/Under	tolerance	$\vdash$	Temperature/Cure
	$\overline{}$	Centre No Cracks	n conce	itric to	U/3  -	Broken/Damaged	$\vdash$	4	on Incomplete		$\vdash$	Part Incorre		$\vdash$	Weld
		Crushed/0	rimned		-	Burrs	$\vdash$	4 '	ions Incomplete/	'Unclear	$\vdash$	Part Lost/M			Wrong Stock Pulled
		Cuffs	ompeu.	•		Contamination		Mainte	•	23.64,	Part Moved		<u> </u>	] 0	

Mislabeled

Out of Calibration

Out of Sequence

Outside Dimensions

Misread

Offset

Countersink

Cut Too Short Drill Holes

Drawing

Finish Folio Positioned Wrong

Power Loss/Surge

Other

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Ripples in Bend

Turning Sequence

Wave/Twist in Tube

Heat Treat

Inspection Strip in Tube

Torque Waves in Extrusion

Work Order ID:

100590

Parent Item:

D3239-1

Parent Item Name:

Cover

**Start Date:** 4/24/2013

Required Date: 5/3/2013

**Start Qty: 24.00** 

Required Qty: 24.00

**Comments:** 

IPP Rev: A New Issue 05-11-06 JLM

IPP: b 06.11.15 waterjet EC

	IPP: D U6.11.15	waterjet	EC										
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6S.050 6061-T6 .050 Sheet		Purchased	No			100	sf	403.5120	0.18	4.5473684	- J	( 13·o	4.26

ocation	Loc Qty	Loc Code	
MAT021	403.512		
114799	56.682		
114993	27		
121192	107		
123293	212.83		

Page 1

NCR: Y	'es / No				<b>WORK ORDER NON-</b>	CON	<b>NFOR!</b>	MANCE / UP!	DATE				
	,									QA Closed:	Date:		
Work Orde	er:				DISPOSITION				AGAINST DE	PARTMENT	/PROCESS		
				<del></del>	Rework	7 I		Skid-tube	Water Jet	Engineering			
Part N	lo.				Scrap	] [		Machining	Small Fab	Pro	d. Eng. Coor.	Quality	
	-				Use-as-is	]	Thern	noforming	Finishing	Rec/Stoi	re/Packaging	Other	
NCR N	lo				Work Order Update	╛╽		Large Fab	Composite		Supplier		
Root				Descri	ption of work order update		nitial	Act	tion	Sign &			
Cause	Date	Step	Qty		or Non-conformance	Ch	ief Eng	Desc	ription	Date	Verification	QC Inspector	
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Equip/Tooling											,		
Operator		ļ				1							
Material													
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Other											Ŧ.		
Process								1					
Supplier													
Training													
Unapproved_				_				<u> </u>		<u> </u>			
					<del></del>	FAUL	T CATE	GORY					
Landir I	ng Gear			_	General		ا م			1	Γ-	Pressure/Forced	
	Bending				Bend	- ⊢	Grain		<u> </u>	Ovalized	-	<b>⊣</b>	
	Centre No	ot Concei	ntric to (	)/S  -	BOM/Route	-	Hardwa			Over/Under	<b>├</b>	Temperature/Cure Weld	
}	Cracks	a		-	Broken/Damaged		1	ion Incomplete		Part Incorre		Wrong Stock Pulled	
-	Crushed/	Crimped.	-	-	Burrs	$\vdash$	i	tions Incomplete/	Unclear	Part Lost/M	issing [		
•	Cuffs			-	Contamination	$\vdash$	ł	enance	-	Part Moved Positioned \	Mrong		
ļ	Heat Trea		T b. a	-	Countersink	-	Mislabe		-	Positioned (		Other	
	Inspectio		rupe	-	Cut Too Short Drill Holes	_	Misread Offset	u	L.	Trower ross/	Juige	Other	
}	Ripples in			. ⊢	┥	Out of Calibration							
ŀ	Torque W			' <u> </u>	Drawing								
	Turning S	equence		L_	Finish	Out of Sequence							

Outside Dimensions

DQA: \_\_\_

Date:

Wave/Twist in Tube

Folio

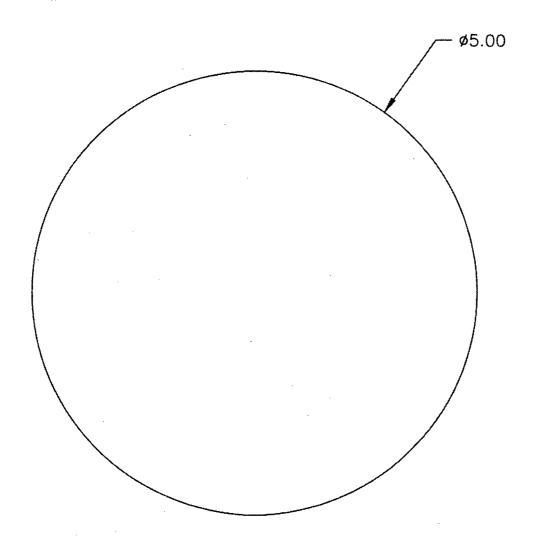
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DESIG	or	DRAWN BY		T AEROSPACE LTD WKESBURY, ONTARIO, CANADA
CHECK	(ED	APPROVED	DRAWING NO.	REV. A
	#	1	D3239	SHEET 1 OF 1
DATE			TILE	SCALE
03.1	2.19		COVER	1:1
 Α		03.12.19	NEW ISSUE	

RELEASED



## D3239-1 COVER

- 1) MATERIAL: 6061-T6 (QQ-A-250/11), 0.050 THICK (REF. M6061T6S.050)
  2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
  3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
  4) ALL DIMENSIONS ARE IN INCHES.

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												DQA:	D	ate:	
NCR:	Yes	/ No				WORK ORDER NON-C	100	NFORM	//ANCE / UP	DATE				•	
												QA Closed:	D	ate:	
Work Orde	ar.					DISPOSITION				AGAINST D	Œ	PARTMENT	PROCESS		
VVOIK OIGE	-					Rework	]		Skid-tube	Crosstube			Water Je	t	Engineering
Part N	۷o.					Scrap		i	Machining	Small Fab		Pro	d. Eng. Coo	·. 🗀	Quality
	•					Use-as-is		Therm	noforming	Finishing		Rec/Stor	e/Packagin	g	Other
NCR N	Vo.					Work Order Update	]		Large Fab	Composite			Supplie	r 🔝	
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Cause		Date	Step	Qty	C	or Non-conformance	Ch	ief Eng	Desc	ription		Date	Verificati	on	QC Inspector
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						F	AUL	T CATE	GORY				,		
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	$\bigsqcup$	Bending				Bend	_	Grain		Ĺ		Ovalized			Pressure/Forced
,		Centre No	ot Concer	ntric to	O/S	BOM/Route		Hardwa	re			Over/Under	tolerance		Temperature/Cure
		Cracks				Broken/Damaged		Inspecti	on Incomplete	1		Part Incorre	ct		Weld
		Crushed/	Crimped.			Burrs		Instruct	ions Incomplete/	Unclear		Part Lost/M	ssing		Wrong Stock Pulled
		Cuffs				Contamination		Mainte	nance	[		Part Moved			
		Heat Trea	t			Countersink		]Mislabe	led			Positioned V	Vrong		_
	Inspection Strip in Tube Cut Too Short		Misread				Power Loss/	Surge		Other					
		Ripples in	Bend	·			Offset								

Out of Calibration

Out of Sequence

Outside Dimensions

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Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish Folio

DART AEROSPACE LTD	Work Order:	100590
Description: Cover	Part Number:	D3239-1
Inspection Dwg: D3239 Rev: A		Page 1 of 1

	FIRST ARTICLE INSPECTION CHECKLIST								
		X	First Arti	cie 🗌	Prot	otype			
ł	rawing nension	Tolerance	Actual Dimension	Accept	Reject	Method o		mments	
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	0.050	+/-0.005	0.047	V		V		· · · · · · · · · · · · · · · · · · ·	
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				045	· · · · · · · · · · · · · · · · · · ·				
Meas	ured by:	MM	Audited by:			Prototype		N/A	
	Date:	13.04.26	Date:	1342	6		Date:	N/A	
Rev	Date	Change	<del></del>	· · · · · · · · · · · · · · · · · · ·		T	Revised by	Approved	
Α	04.10.05	New Issue	P/O D412-7	09-011			KJ/JLM A	Cid	

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				DQA:
NCR:	Yes	/ No	WORK ORDER NON-CONFORMANCE / UPDATE	

NCR: Y	es / No				WORK ORDER NON-	CONFOR	WANCE / OPDATE	QA Closed:	Date:	
Work Orde	r:				DISPOSITION		AGAINST DEPARTMENT/PROCESS			
Part No.					Rework Scrap Use-as-is	Ther	Skid-tube Crosstube  Machining Small Fab  Thermoforming Finishing		Water Jet d. Eng. Coor. re/Packaging	Engineering Quality Other
NCR No.					Work Order Update	]	Large Fab Composite		Supplier	
Root				Descri	ption of work order update	Initial	Action	Sign &		
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	ng Gear				F	AULT CATE	EGORY			
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}	Cracks				Broken/Damaged	<b>⊢</b>	tion Incomplete	Part Incorre	<del> </del>	Weld
Ì	Crushed/Crimped.				Burrs	<b>—</b>	Instructions Incomplete/Unclear		issing	Wrong Stock Pulled
ŀ	Cuffs				Contamination	<del></del>	enance	Part Moved	_	
ŀ	Heat Tre	at		-	Countersink	Mislab	<u> </u>	Positioned \		
ļ		on Strip in	Tube	-	Cut Too Short	_	Misread		/Surge	Other
t	Ripples i				Drill Holes	Offset	L		· L	<u> </u>
ļ	Torque Waves in Extrusion				Drawing	Out of	Calibration			
•	Turning Sequence				Finish	Out of	Sequence			
Ì	Wave/Twist in Tube				Folio	Outsid	e Dimensions			

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